CONTENTS

Preface
T. Ichimura xv

INVITED PAPERS

Sustainable production – a new paradigm for a new millennium
C. O'Brien 1
Turbulent times require creative thinking: New European concepts in production management
H.-J. Bullinger 9
Next generation of production research: Wisdom, collaboration, and society
S.Y. Nof 29

RESEARCH PAPERS

Production Concepts and Performance Measurement
Concepts and methods for a production integrated environmental protection
H.-J. Bullinger, J. von Steinaecker and A. Weller 35
Agility, adaptability and leanness: A comparison of concepts and a study of practice
H. Katayama and D. Bennett 43
The forces that shape organisational performance measurement systems: An interdisciplinary review
D.B. Waggoner, A.D. Neely and M.P. Kennerley 53
Performance measurement for product design and development in a manufacturing environment
K.S. Pawar and H. Driva 61
A technology oriented productivity measurement model
W.-C. Chiou, H.-W. Kuo and I.-Y. Lu 69
Towards a framework for analyzing efficiency during start-up: An empirical investigation of a Swedish auto manufacturer
H. Almgren 79

Manufacturing Strategy
A methodology for formulating a business strategy in manufacturing firms
L.E. Quezada, F.M. Córdova, S. Widmer and C. O'Brien 87
Creating a model of process innovation for reengineering of business and manufacturing
J. Papinniemi 95
Reengineering for human resource management in Japanese companies: Is it important to be introduced?
D. Purwadi, K. Tanaka and M. Ota 103
Component part standardization: A way to reduce the life-cycle costs of products
H.S.C. Perera, N. Nagarur and M.T. Tabucanon 109
Impact of various flexibility types in a hybrid fabrication/assembly production system
H. Tsubone and M. Horikawa 117

Impact of commonality and flexibility on manufacturing performance: A simulation study
N. Nagarur and A. Azeem 125
An analysis of innovation management systems' characteristics
M. Tuominen, P. Piippo, T. Ichimura and Y. Matsumoto 135
Introducing a platform strategy in product development
M. Muffatto 145
Company-wide integration of strategic maintenance: An empirical analysis
P. Jonsson 155
Subcontractors in a partnership environment: A study on changing manufacturing strategy
U. Lehtinen 165

Management Information System
A design for a management information system with consideration for stochastic variability
K. Nakashima 171
Decision support tool for justifying alternative manufacturing and production control systems
N. Chiadamrong and C. O'Brien 177
Interactive decision system in stochastic multiobjective portfolio selection
C. Shing and H. Nagasawa 187
Module-based intelligent advisory system
J. Papstel 195
An automated welding operation planning system for block assembly in shipbuilding
K.-K. Cho, J.-G. Sun and J.-S. Oh 203
Decision support system for a jewellery manufacturer
T.N. Wong, C.H. Cheung and H. Lau 211
Policy exercise: An essential enabler of virtual corporation
T. Tsuchiya and S. Tsuchiya 221
Integrated environmental management process applying genetic algorithm
T. Takeuchi, Y. Yazu and A. Sakuma 229
An experimental evaluation of input devices for pointing work
H. Ichikawa, M. Homma and M. Umemura 235
An object-oriented multitasking control environment for multirobot system programming and execution with 3D graphic simulation
G. Yasuda 241

Logistics and Distributed Manufacturing
Concurrent engineering for global manufacturing
H.S. Abdalla 251
Performance and partnership in global manufacturing-modelling frameworks and techniques
E.K. Lo and C. Pushpakumara 261
Quality assurance in food and agribusiness supply chains: Developing successful partnerships
G.W. Ziggers and J. Trienekens 271
Communication-based coordination modeling in distributed manufacturing systems
J.A. Ceroni, M. Matsui and S.Y. Nof 281

Designing of a production ordering system for automobile repair parts
S. Hiraki, K. Ishii and H. Katayama 289
Studies on the optimal location of commerce – basic laws considering the distribution of population
K. Minagawa and K. Sumiyoshi 295
The procedure of determining the order picking strategies in distribution center
C.-H. Lin and I.-Y. Lu 301
A study on shelf space allocation and management
M.-H. Yang and W.-C. Chen 309
Determination of dominant facility locations with minimum noise levels for the cost contour map
S. Nanthavanij and N. Asadathorn 319

Modeling of Manufacturing and Inventory Control
Agent oriented system approach for workflow automation
A. Inamoto 327
A genetic algorithm method for one-dimensional machine location problems
D. Gong, G. Yamazaki, M. Gen and W. Xu 337
The development of an object-oriented simulation system based on the thought process of the manufacturing system design
H. Hibino, Y. Fukuda, S. Fujii, F. Kojima, K. Mitsuyuki and Y. Yura 343
An optimal worker allocation problem for a U-shaped production line
K. Nakade and K. Ohno 353
The eclectic model for stochastic dynamic production cycling problem
M. Yokoyama 359
Transient behavior of a single-stage kanban system based on the queueing model
Y. Seki and N. Hoshino 369
A semi-open decomposition approach for an open queueing network in a general configuration with a kanban blocking mechanism
Z. Xiaobo and Z. Zhou 375
Further developments on safety stocks in an MRP system applying Laplace transforms and input–output analysis
R.W. Grubbström and O. Tang 381
Optimal inventory control policy subject to different selling prices of perishable commodities
Y. Adachi, T. Nose and S. Kuriyama 389
Measuring the impact of asymmetric demand distributions on inventories
E. Bartezzaghi, R. Verganti and G. Zotteri 395
A turbine-blade balancing problem
W. Choi, H. Kang and T. Baek 405
Biomechanical study on the postures in manual lifting tasks using cusp surface analysis
Y. Kume and N. Sato 411

Cellular Manufacturing and FMS
A genetic algorithm-based approach for design of independent manufacturing cells
C. Moon and M. Gen 421
Information analysis in a distributed dynamic group technology method
D. Ben-Arieh and R. Sreenivasan 427

Multivariate analysis model for machine-part cell formation problem in group technology
M. Kitaoka, R. Nakamura, S. Serizawa and J. Usuki 433
Dynamic control of a cellular-line production system under variations in the product mix
M. Kuroda, T. Tomita and K. Maeda 439
Limited flexibility in cellular manufacturing systems: A simulation study
V. Albino and A.C. Garavelli 447
Dynamic process planning system for a machining center in an FMS environment
K. Ohashi 457
An adaptive dispatching algorithm for automated guided vehicles based on an evolutionary process
S.H. Kim and H. Hwang 465
Integrated manufacturing planning for an AGV-based FMS
Y. Seo and P.J. Egbelu 473
The use of feedforward neural networks for machine vision calibration
M.B. Lynch, C.H. Dagli and M. Vallenki 479
Performance-based control for the machining process and its application
H. Bin, J. Jin, Y. Sun and M. Yang 491
A study of estimation method for mouth position using image processing technique
S. Tokunaga, H. Osaki and Y. Sakai 497

Scheduling and Sequencing
Rescheduling and optimization of schedules considering machine failures
B. Guo and Y. Nonaka 503
Simulated annealing approach for minimizing the makespan of the general job-shop
T. Satake, K. Morikawa, K. Takahashi and N. Nakamura 515
Cyclic scheduling for re-entrant manufacturing systems
K. Yura 523
Bi-criteria scheduling problem on three identical parallel machines
S. Mohri, T. Masuda and H. Ishii 529
Single machine scheduling to meet due times under shutdown constraints
M. Asano and H. Ohta 537
A quick optimal algorithm for sequencing on one machine to minimize total tardiness
Y. Hirakawa 549
A sequencing problem to level part usage rates and work loads for a mixed-model assembly line with a bypass subline
T. Tamura, H. Long and K. Ohno 557
Sequencing method for products in consideration of assembly time
K. Kurashige, Y. Yoshinari, S. Miyazaki and Y. Kameyama 565
A study of "fragrance" on working environment characteristics in VDT work activities
M. Kawakami, S. Aoki and T. Ohkubo 575

Quality Control and Reliability
Intelligent process control in manufacturing industry with sequential processes
B.S. Kang, D.H. Choe and S.C. Park 583
A study on "science SQC" by utilizing "management SQC" – A demonstrative study on a new SQC concept and procedure in the manufacturing industry
K. Amasaka 591

Patterns of organizational and technological development in the Thai manufacturing industry
M. Nagswasdi and C. O'Brien 599
Structural reliability estimation based on simulation within limited sampling region
M. Yonezawa, S. Okuda and Y.T. Park 607
Optimal control policy for a tool-wear process subject to shocks and random failures
V. Makis 613
A Bayesian approach to prediction of system failure rates by criticalities under event trees
C.-H. Jun, S.Y. Chang, Y. Hong and H. Yang 623
Statistical model selection based on Bayes decision theory and its application to change detection problem
M. Gotoh and S. Hirasawa 629

Diary of Events 639
Author Index to Volumes 60–61 643